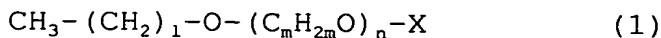


WHAT IS CLAIMED IS:

1. A cleaning solution for semiconductor substrates which contains a nonionic surface active agent represented by the following formula (1), a chelating agent and a chelating accelerator:

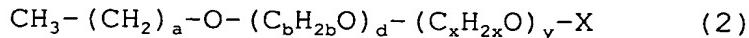


(in the formula, 1, m and n independently represent a positive number, and X represents a hydrogen atom or a hydrocarbon group).

2. A cleaning solution according to claim 1, wherein l is 8-11.

3. A cleaning solution according to claim 1, wherein m is 2 and n is 5-10.

4. A cleaning solution for semiconductor substrates according to any one of claims 1-3, which further comprises a nonionic surface active agent represented by the following formula (2):



(in the above formula, a, b, d, x and y independently represent a positive number, b and x are different, and X represents a hydrogen atom or a hydrocarbon group).

5. A cleaning solution according to claim 4, wherein a is 8-11.

6. A cleaning solution according to claim 4,

wherein b is 2, x is 3-5, d is 10 or less and y is 5 or less.

7. A cleaning solution for semiconductor substrates which contains a nonionic surface active agent represented by the formula (2), a chelating agent and a chelating accelerator.

8. A cleaning solution according to claim 7, wherein a is 8-11.

9. A cleaning solution according to claim 7, wherein b is 2, x is 3-5, d is 10 or less and y is 5 or less.

10. A cleaning solution according to claim 1 or claim 7, wherein the chelating agent is at least one compound selected from the group consisting of polyaminocarboxylic acids, polycarboxylic acids, compounds having phosphonic acid group, oxycarboxylic acids, phenols, heterocyclic compounds and tropolones.

11. A cleaning solution according to claim 10, wherein the chelating agent is at least one compound selected from the group consisting of ethylenediaminetetraacetic acid, oxalic acid, ammonium oxalate, 1-hydroxyethylidenediphosphonic acid, citric acid, ammonium citrate, catechol, ethylenediaminediorthohydroxyphenylacetic acid [EDDHA], 8-quinolinol, and tropolone.

12. A cleaning solution according to claim 1 or claim 7, wherein the chelating accelerator contains a hydroxide and a fluoride or a salt thereof.

13. A cleaning solution according to claim 12, wherein the hydroxide is a compound containing no metal.
14. A cleaning solution according to claim 13, wherein the hydroxide is at least one compound selected from the group consisting of ammonium hydroxide, tetramethylammonium hydroxide and choline.
15. A cleaning solution according to claim 12, wherein the fluoride or salt thereof is hydrofluoric acid or ammonium fluoride.
16. A cleaning solution according to claim 1 or claim 7 which further comprises a corrosion inhibitor for metals.
17. A cleaning solution according to claim 16, wherein the corrosion inhibitor for metals contains an organic compound having at least one of nitrogen atom, oxygen atom, phosphor atom and sulfur atom in the molecule.
18. A cleaning solution according to claim 17, wherein the corrosion inhibitor for metals contains a compound having at least one azole group in the molecule.
19. A cleaning solution according to claim 17, wherein the corrosion inhibitor for metals contains an aliphatic alcohol compound having at least one mercapto group, the carbon atom to which the mercapto group is bonded and the carbon atom to which the hydroxyl group is bonded being adjacent to each other.

20. A cleaning solution according to claim 1 or claim 7 which has a pH of 7 or higher.
21. A method for making a semiconductor device which comprises cleaning an insulating film of low dielectric constant exposed on the surface of a semiconductor substrate using the cleaning solution of claim 1 or claim 7.